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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,535	09/30/2003	Keiichi Ikebe	6453P010	8316

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EXAMINER	
GE, YUZHEN	
ART UNIT	PAPER NUMBER
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,535	IKEBE ET AL.	
	Examiner	Art Unit	
	Yuzhen Ge	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-47 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5,10,11 and 15-47 is/are rejected.

7)☒ Claim(s) 6-9 and 12-14 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 September 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: it depends on itself. Appropriate correction is required. The examiner will interpret the claim as dependent on claim 5.

Claim Rejections - 35 USC § 101

Claims 24-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility states in page 53 that "A claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory."
However, Claims 24-31 do not recite explicitly "a computer-readable medium encoded with a computer program". The recitation of "an article comprising computer memory encoded with a program" may include other nonstatutory subject matters.

Currently in TC 2600, it is required explicitly to include "computer-readable medium", "encoded" (or "storing", "embodied with a", "encoded with a", "having a stored", "having an encoded"), and "computer program" in the claim language to make it explicitly a statutory subject matter.

Claim Rejections - 35 USC § 102

2. Claims 1-2, 4, 15-17, 19, 23-25, 27, 31-33, 35, 39-41, 43, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Easwar et al (US Patent 6,825,876 B1).

Regarding claim 1, Easwar et al teach a color imaging device comprising:

an imager to generate an image with color decomposition, the imager producing raw image data as a result of generating the image (Fig. 3A, col. 2, lines 15-49, col. 9, lines 55-60, col. 11, lines 4-12, Fig. 5, col. 21, lines 21-67, col. 28, line 66-col. 29, line 30);

a raw image data decomposing unit to decompose the raw image data into a plurality of color planes such that each color plane includes data of pixels of the same color in the form of sub-color image data (Fig. 3A, col. 2, lines 15-49, col. 9, lines 55-60, col. 11, lines 4-12, Fig. 5, col. 21, lines 21-67, col. 28, line 66-col. 29, line 30); and

data compressing unit to compress the sub-color image data for each of the plurality of color planes (Figs. 3A-4A, abstract, col. 2, lines 58-67, col. 3, lines 1-17, col. 10, lines 7-15, col. 11, lines 4-12, col. 21, lines 21-67, col. 23, line 60-col. 24, line 40, col. 28, line 66-col. 29, line 30).

Regarding claim 2, Easwar et al teach a color imaging device as claimed in claim 1, wherein the data compressing unit conducts a reversible data compression for each of the plurality of color planes (col. 3, lines 6-17, col. 25, lines 2-16).

Regarding claim 4, Easwar et al teach a color imaging device as claimed in claim 1, wherein the data compression unit applies a non-reversible compression to all of the plurality of color planes (col. 28, line 66-col. 29, line 30, col. 30, lines 52-65).

Regarding claim 15, Easwar et al teach a color imaging device as claimed in claim 1, wherein the compression unit compresses data of each color plane according to a compression encoding algorithm in compliance with JPEG 2000 (col. 27, lines 1-4).

Claims 16-17, 19 and 23 and 32-33, 35 and 39 are the corresponding method and computer-implemented method claims of claims 1, 2, 4 and 15. Easwar et al teach a computer-implemented method (Fig. 3A, title and abstract). Thus Easwar et al teach claims 16-17, 19 and 23 and 32-33, 35 and 39 as evidently explained in the above-cited passages.

Claims 24-25, 27 and 31 are the corresponding medium claims of claims 1, 2, 4 and 15. Easwar et al teach a computer-readable medium (Fig. 2). Thus Easwar et al teach claims 24-25, 27 and 31 as evidently explained in the above-cited passages.

Claims 40-41, 43 and 47 are the corresponding computer claims of claims 1, 2, 4 and 15. Easwar et al teach a computer (Fig. 2). Thus Easwar et al teach claims 40-41, 43 and 47 as evidently explained in the above-cited passages.

Claim Rejections - 35 USC § 103

3. Claims 3, 5, 18, 20, 26, 28, 34, 36, 42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Easwar et al in view of (6,934,418 B2) in view of Okada (US Patent 6,934,418).

Regarding claims 3 and 5, Easwar et al teach a color imaging device as claimed in claim 1, wherein the data compression unit applies a reversible (lossless) data compression (col. 3, lines 1-17). However they do not explicitly teach applying a reversible data compression to a specific color plane that provides a relatively large influence on the resolution of a reproduced image and a non-reversible data compression to the other color planes that provide less influence to the resolution of the reproduced image and a controller to control a compression ratio for a specific color plane that provides a larger effect on the resolution of the reproduced image, independently to the compression ratio for other color planes having a smaller effect on the resolution of the reproduced image.. In the same field of endeavor, Okada teaches sub sampling Cb and Cr color planes while leaving Y plane at full resolution (Figs. 10 and 11, it is well known that JPEG and JPEG 2000 uses 4:2:0 format) before data compression. It is desirable to compress image while maintaining certain image quality based on human visual system (col. 2, lines 50-67, col. 10, lines 19-25 of Easwar et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of inversion to use the controller or method of Okada before the lossless step of Easwar et al to achieve a reversible data compression for the Y plane and non-reversible data compression for the Cb and Cr planes or control the compression ratio differently and

independently from Cr and Cb planes so that good compression ratio is achieved while the image shows little or no difference to human eyes.

Claims 18, 20 and 34, 36 are the corresponding method and computer-implemented method claims of claims 3 and 5. Easwar et al teach a computer-implemented method (Fig. 3A, title and abstract). Thus Easwar et al and Okada teach claims 18, 20 and 34, 36 as evidently explained in the above-cited passages.

Claims 26 and 28 are the corresponding medium claims of claims 3 and 5. Easwar et al teach a computer-readable medium (Fig. 2). Thus Easwar et al and Okada teach claims 26 and 28 as evidently explained in the above-cited passages.

Claims 42 and 44 are the corresponding computer claims of claims 3 and 5. Easwar et al teach a computer (Fig. 2). Thus Easwar et al and Okada teach claims 42 and 44 as evidently explained in the above-cited passages.

4. Claims 10-11, 21-22, 29-30, and 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Easwar et al in view of Matoba et al (US Patent 6,269,183 B1).

Regarding claim 10, Easwar et al teach a color imaging device as claimed in claim 4. However they do not explicitly teach a controller to control a compression ratio of each of the color planes independently. In the same field of endeavor, Matoba et al teach a controller to control a compression ratio of each of the color planes independently (col. 3, lines 4-6). It is desirable to

effectively process three color signals of different characteristics individually (col. 1, lines 35-40 of Matoba et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention to use the method/controller of Matoba et al to control a compression ratio of each of the color planes independently so that processing of different color planes can be more effective.

Regarding claim 11, Easwar et al and Matoba et al teach a color imaging device as claimed in claim 10. Matoba et al further teach an information acquiring unit to acquire information for determining the compression ratio for each of the color planes, wherein the controller determines the compression ratio of each of the color planes based on the information acquired by the information acquiring unit (col. 9, line 30-65, Figs. 10 and 12-13).

Claims 21-22 are the corresponding method claims of claims 10-11. Easwar et al teach a computer-implemented method (Fig. 3A, title and abstract). Thus Easwar et al and Matoba et al teach claims 21-22 as evidently explained in the above-cited passages.

Claims 29-30 are the corresponding medium claims of claims 10-11. Easwar et al teach a computer-readable medium (Fig. 2). Thus Easwar et al and Matoba et al teach claims 29-30 as evidently explained in the above-cited passages.

Claims 45-46 are the corresponding computer claims of claims 10-11. Easwar et al teach a computer (Fig. 2). Thus Easwar et al and Matoba et al teach claims 45-46 as evidently explained in the above-cited passages.

5. Claim 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Easwar et al in view of (6,934,418 B2) in view of Okada (US Patent 6,934,418), further in view of Matoba et al (US Patent 6,269,183 B1).

Claims 37-38 are the corresponding method and computer-implemented method claims of claims 10-11 but depends on claim 36 which is the corresponding method claim of claim 5. Easwar et al teach a computer-implemented method (Fig. 3A, title and abstract). Thus Easwar et al, Okada and Matoba et al teach claims 37-38 as evidently explained in the above-cited passages.

Allowable Subject Matter

Claims 6, 8-9, 12-14 and interpreted claim 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the listed claims each of which specifically comprises the following listed feature(s) in combination with other limitations in the respective claims:

Claim 6

-- wherein the controller sets, in the case a user of the color imaging device attaches importance to resolution of reproduced images, the compression ratio of the specific color plane to be smaller than a standard compression ratio.

Claim 7

-- wherein the controller sets, in the case a user of the color imaging device attaches importance to resolution of reproduced images, the compression ratio of the specific color plane to be smaller than a standard compression ratio and further the compression ratio of the other color planes to be larger than the standard compression ratio.

Claim 8

-- wherein the controller sets, in the case a user of the color imaging device attaches importance to color reproducibility of reproduced images, the compression ratio of the specific color plane to be smaller than a standard compression ratio.

Claim 9

-- wherein the controller sets, in the case a user of the color imaging device attaches importance to color reproducibility of reproduced images, the compression ratio of the specific color plane to be smaller than a standard compression ratio and further the compression ratio of other color planes to be larger than the standard compression ratio.

Claim 12

-- wherein the information acquiring unit acquires information about the proportion of high frequency components for each color, and wherein the controller sets the compression ratio of the color plane in which the proportion of the high-frequency component is smallest to be higher than a standard compression ratio.

Claim 13

-- wherein the information acquiring unit acquires evaluation of white-balance, and wherein the controller determines whether the proportion of the color component is large or small based on the evaluation, the controller further setting the compression ratio of the color plane of which white-balance is determined to be small, to be larger than a standard compression ratio.

Claim 14

-- wherein the controller sets the compression ratio for each color plane based on an instruction of a user of the color imaging device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge
Examiner
Art Unit 2624

WENPENG CHEN
PRIMARY EXAMINER

2/22/07